



ITU Telecommunication Development Bureau (BDT)

Report on the Regional Economic and Financial Forum of Telecommunications/ICT for Africa Brazzaville, Republic of Congo, 18-19 February 2014

I. Introduction

The International Telecommunication Union (ITU) Regional Economic and Financial Forum of Telecommunication/ICT for Africa, organized by the Telecommunication Development Bureau (BDT), in collaboration with the Agence de Regulation des Postes et des Communications Electroniques (ARPCE) was held in Brazzaville, Republic of Congo, from 18 to 19 February 2014.

The Forum was followed by the meeting of Study Group 3 Regional Group for Africa (SG3RG-AFR) organized by the Telecommunication Standardization Bureau (TSB) with 59 participants from 23 countries including regional organizations such as ATU, AFRINIC and CEMAC. *The complete list of participants as well as all the presentations is available at:*

<http://www.itu.int/en/ITU-D/Regulatory-Market/Pages/Events2014/Brazzaville/Home.aspx>

II. Opening ceremony

The opening ceremony was presided over by Mr Yves CASTANOU, Director General, ARPCE who delivered a welcome address, followed by a statement by Mr Ballo DJIBRILLA representing the African Telecommunications Union (ATU), Mr Saliou TOURE, Chairman of SG3RG-AFR and Ms Carmen PRADO-WAGNER, representing the ITU/BDT.

S.E. M. Thierry MOUNGALLA, *Ministre des Poste et des Télécommunications*, République du Congo gave the key note speech stressing the importance of the Forum as a platform for countries to learn and share their experiences in the ICT sector and ICT best practices.

He stressed that high speed infrastructure and new technology is the oil of the economy the 21st century and the investment in such infrastructure is therefore crucial. The Government of Republic of Congo has placed ICTs as one of the most important tool for growing the economy and the process to develop high speed backbone is underway throughout the country. The government has also established an institutional, legal and regulatory framework with the establishment of an independent Agency- ARCPCE in 2001, as such creating an enabling environment for investment.

He noted that the meeting was timely given the paradox that governments and operators are facing with declining traffic and revenue with a shift to OTT services and called upon the meeting to come up

with a practical framework to address these challenges as well as define approaches for enhancing access and affordability to ICTs to capitalise fully on potentials of the digital world.

III. Summary of the discussions

The Forum was chaired by Mr Yves CASTANOU, *Directeur Général, ARPCE*.

Session 1: The impact of the development of Internet and OTT on voice services (voice decline? New services?)

ITU Expert, Oscar Gonzalez Soto opened the session with a presentation on the impact of Internet and OTT (Over The Top) on voice and new services. He noted that a major evolution of network technologies, capacities and market dynamics in current days has led to a fundamental change in the migration of voice, in the offering of new services and in the blow up of new players that imposes a new paradigm in the related business rules. He reviewed the issues derived from the changes driving services for the NGN, the impact of the Over the Top players (OTT) on the market and the recommended strategies for service providers to adapt in such a scenario.

The strengths of the OTTs like economy of scale and quick deployment; the weakness like Quality of Service (QoS) control and local customization were posed for discussion. He noted that in current market dynamics, operators need to be actively involved in the Rich Communication Suite and position themselves in the offering of high contribution value services to the value chain in order to compete and or cooperate with the OTTs. He concluded by emphasizing the high potential for new NGN services which is driving interest in the network modernization to capture new revenues and called upon Governments to accelerate their NGN deployment, to analyze new business chain from content and watch OTT services, as well as pay attention to QoS on VoIP and Consumer experience.

Interventions from Panelists:

Ms Euphemie NIZEYE from the Agence de régulation et de contrôle des Télécommunications (ARCT) of Burundi participated as the first panelist for this session. Ms Nizeye highlighted the developments of ICTs in Burundi, emphasizing the contribution of mobile technologies such as 3G to the growth in the uptake of mobile services and Internet in the country. Although prices for ICTs services have reduced, challenges such as limited spread of electricity and literacy still limit access. Operators are also faced with a decline in voice traffic possibly due to shift to OTTs. She recommended for a more comprehensive study and continued engagement at local, regional and international level in quantifying the impact of OTT services which will guide future policy and regulatory intervention.

Fellow panelist **Mr Fernando M. ABRAS MUÑOZ** from Global Voice Group, République du Congo pointed out the impact of 3G and fibre access to internet in Africa which has seen the growth in demand of 20% since 2005-2013. He noted that IP traffic is growing faster than the traditional voice even in Africa and IP turnover is projected to surpass conventional voice by 2018. He called for a review of the financial and regulatory approaches and emulate best practices, citing South Africa and Kenya approaches to attract OTT player in the local market.

Discussion from the session ended with a call for a regional approach in the area of competition assessment possibly at regional and global level to address international oligopolies/ monopolies such as OTT providers and the need to design approaches that mandate such operators to contribute to taxes and infrastructure deployment, an approach that is being explored in the EU. The need to recognize the impact of OTT on consumers was highlighted and to explore solutions and opportunities in the new environment. Quantitative measurement of the impact of OTTs is also required to inform future regulatory and policy interventions.

Session 2: Submarine cable: Organization and operation of a consortium, agreement for a system construction and maintenance

The session started with a presentation by **Mr Saliou TOURE**, Sonatel, Sénégal discussing the main stages in setting up a submarine cable, the operations of a consortium, the key aspects of C&MA, the different types of building and management activation as well as the maintenance and recovery processes. Mr Toure gave an overview of the 3 submarine cable that have landed in Dakar starting with the Atlantis 2 in 2000, followed by SAT-3.WASC/SAFE in 2002 and more recently the ACE in 2012. He concluded his presentation by showing the features of the ACE including its configuration, coverage, and capacity, level of investment, ownership and management structure.

The panelist for the session **Ms Adelaide M. ABREU DE ASSUNÇÃO FAHE**, Autoridade Geral de Regulação (AGER), Republica Democrática de São Tomé e Príncipe discussed her country's participation in the ACE submarine cables, supported by the World Bank, the organization, operation, membership, management and financing model of Special Purpose Vehicle SPV and Public Private Partnership (PPP) that have been adopted. She concluded by highlighting the social economic impact witnessed since the landing of the ACE Cable which have included; a reduction in retail Internet prices, an increase in Internet penetration and usage in the health sector and education as more schools are getting connected and the improvement in Internal connectivity between Sao Tome and Principe Ille.

Some of the issues noted in the discussion were the continued call for open access at a point of activation to reduce monopoly rent seeking, transparent pricing and availing capacity information, as well as ensuring access and participation for landlocked countries to C&MA.

Session 3: IP Interconnection charging and Session 4 Cost and tariffs policies in the region

The session was led by the ITU expert, **Mr Pedro SEIXAS** who described the trend in IP interconnection including the changes in peering and transit arrangements. The growth in peering arrangements, the increase in the number of IXPs and the development of regional content and Content Distribution Networks (CDN) as well as the emergence of hyper players in the CDN market such as the OTTs has led to a reduction in the cost of interconnection arrangements. This has made the Internet structure less hierarchical and more densely interconnected and complex which is also creating a rise in commercial disputes along the value chain

The speaker noted that it is becoming more increasingly difficult in the IP environment to model the cost of an efficient operator due to the difference in key network features such as the asset base, the transmission networks and cost drivers from the PSTN network and recommended for QoS regulatory forbearance since it is also difficult to set economically optimum QoS standards in the IP environment.

He concluded by pointing out that whereas traditional regulation has focused on curbing market dominance, the Internet has demonstrated that dynamic markets find their own equilibrium over time, even without regulatory intervention. There is increasing evidence that interconnection of broadband networks can do the same therefore Regulatory forbearance (and ex-post intervention where necessary) may be the general way forward.

Ms Carmen PRADO-WAGNER made a presentation on costing and tariff policies in the African region highlighting the growth in mobile cellular subscriptions which was estimated at 6.8 billion by the end of 2013 with Africa growing at a rate of 68% between 2005- 2013. She noted that there has been a reduction in mobile broadband rates, but a regional comparison highlights that mobile-broadband services remain largely unaffordable in Africa. For instance, the price of a computer-based plan with 1GB of data volume represented on average more than 50% of Gross National Income p.c. in 2013. A number of regulators in Africa have moved toward cost orientation price regulation and have adopted the LRIC approach.

The speaker concluded the presentation with a display of the ICT-Eye, ITU/BDT's information portal on economics and finance.

Interventions from Panelists

Ms Ruth SAWARENGERA- MSUKU from the Malawi Communications Regulatory Authority (MACRA) noting that Malawi is moving ahead in ensuring that the Telecommunication industry tariff are be fully regulated. A set of regulations has been drafted and once approved; it will give MACRA the powers to review tariffs of the operators and ensure set tariffs are cost oriented and are in accordance to the set tariff structure. A cost model shall be adopted in consultation with the industry and tariffs shall be unbundled, so that end users do not pay for facilities that are not part of the service package. Currently individual operators just notify the regulator on their prices changes. She noted that the new approach may be resisted by operators but the regulator is committed to consult with the industry and consumers widely.

Mr Fredrick ASUMANU from the National Communication Authority of Ghana shared his country experience in costing and tariff regulation starting with an over view of the telecommunications market. He noted that Ghana adopted a cost model in 2009 with the objective of establishing fair and equitable interconnection rates as mandated by the NCA Act of 2008. There is no retail regulation but operators are required to notify changes in tariffs at least 5 days before their effectiveness. Ghana put in place an asymmetric interconnection regime in 2012 to encourage entry of new operators. The asymmetric regime is applicable in the 24 months and or when an operator market share of 5%.

Mr Raymond MFUNGAHEMA from the Tanzania Communications Regulatory Authority contributed to the discussion by showcasing the efforts made to achieve cost oriented interconnection rates since the initial cost study process in 2004 when rates were at 104.3 TZ cents to date, when the interconnection rates are as low as 34 cents . Transparency in the process and commitment from government has been a key feature in Tanzania’s success. He highlighted the need for a further review of tariff approaches in light of the changing business models where digital and broadband services are taking a prominent role.

Ms Rumbidzai Panavanhu from the Post and Telecommunications Authority of Zimbabwe, informed the forum that POTRAZ is currently conducting a LRIC cost modeling exercise to be concluded by April 2014. Prior to this, Zimbabwe in 2009, adopted the COSITU model and the current interconnection rates based this approach. The country is also conducting a WACC study which will form input to the LRIC study. Some of the challenges have been resistance and slow response to data request from operators.

Session 5: NGN regulation and licensing regime in Africa – best practices

This session was opened with a presentation by **Mr Oscar GONZALEZ SOTO**, an ITU expert noting that the fast change of technology capabilities, new services offering and market evolution poses a number of challenges to the Regulators who should keep pace with the evolution speed and be effectiveness in obtaining their objective. He reviewed some of those challenges, noting that within the main challenges, topics to be analyzed is the strong interrelation among new players, the required multiservice approach, the multiple interoperability scenarios to address during transition, the new traffic units to be used, the importance of the resource sharing options, the widely discussed net neutrality and the cross border issues at regional or worldwide level.

Mr Gonzalez summarized example cases of a selection of countries with the higher ITC Development Index level in Africa from an external public observation viewpoint. A description was made for worldwide best practices with four main directions calling for the convergence in Regulation to be aligned with the convergence on networks, services and resources namely: 1) general authorization for operation licenses, 2) based on facilities and services, 3) converged multiservice license and 4) convergence access unified license. He concluded by proposing a recommendation for the modernization of regulation to be based on a macroscopic market vision and a strong customer orientation practice mindful of the need for regulators to maintain the same principals of accountability, quality and consistency.

During the discussion the issue of if there is indeed a need for a customized NGN cost model for Africa was raised. It was agreed that this can be discussed further during the planned SG3AFR meeting.

Session 6: Implementation and management of Internet Exchange Points (IXP)

The session presentation was made by **Mr Hytham EL NAKHAL**, AFRINIC who explained that primary role of IXPs is to keep Internet traffic local and save on international bandwidth which reduces costs and to ensure in-border operation continuity in case of international connectivity failure. He elaborated on the key issues to be considered in setting up IXP such as the location, optimum number of players

and traffic required as well as the management and operational models that have been adopted. He highlighted the impact that IXPs has had on the eco-systems in Kenya, Nigeria and Cairo where all countries have registered a reduction in latency, an increase in local traffic exchange and e-government services. Mr El Nakhal concluded with a brief on the ongoing African Internet Exchange System (AXIS) Project which aims at keeping African Internet traffic local to the continent by providing support and technical assistance to facilitate establishment of National Internet Exchange points, Regional Internet Exchange Points and Regional Internet Carriers.

Panelists for the session included **Mr Romain CIZA**, Autorité de régulation de la poste et des télécommunications du République Démocratique du Congo (ARPTC), who described the process undertaken to set up the Kinshasa IXP and the operational model to be adopted. He concluded by raising the need to develop strategies to increase the volume of traffic and local content to enhance the efficiency and the feasibility of IXPs, an issue which should possibly reviewed further by the SG3AFR meeting.

Mr Jean Arnaud NGOUA, ARPCE, République du Congo added on the discussion detailing how the Internet Exchange Point of the Republic of Congo called CGIX (Point d'échange Internet en République du Congo) was set up and launched in May 10, 2013. He noted that all issues (Technical, Legal, Financial, Strategic) relating to the implementation of CGIX were defined by the Working Group Internet (GTI); the CGIX is managed by the ARCPE and there are currently two mobile operators and 4 ISPs that are connected to this CGIX with an average capacity of 150kbit/s. He concluded by noting that CGIX has become the pillar of the economy, it hosts the government's websites, and represents the country's national identity on the global Internet web.

Ms Salamtu ISSOUFOU HAMANI, Ministère des Postes, des télécommunications et de l'économie numérique, Niger described the country's progress in establishing the NigerIXP, a process that started in 2011 with the assistance of the Commission of the African Union and the Internet Society in the implementation of the IXP a working team has been established to define the technical and operational modalities of the ISP. Government plans to further consultations and stakeholder sensitization as well as study the possibility to grant certain facilities to NigerIXP including subsidies from the Universal access funds.

Issues noted during the discussion included the challenges that still exist with regards to the use and management of local domain address, the need to define a common peering approach and encourage peering within the region and a call to accelerate the establishment of IXP to cover all countries within the region as defined by the PIDA program. The need to define strategies and approaches for local content generations was highlighted and a survey to assess the impact of IXPs and implication in respect to cost, volume of traffic was proposed as this would assist in establishing the feasibility of IXPs and encourage more countries to set up IXPs.

The session was closed with a visit to the ARPCE offices to review implementation and management of the Internet Exchange Point of the Republic of Congo called CGIX.

Session 7: Price regulation of unbundled services (fixed and mobile Broadband)

Mr Pedro SEIXAS, ITU Expert started the session with a presentation highlighting the concerns that regulators should consider when setting up pricing policies such as affordability, infrastructure investment requirements, disposable income mindful that broadband is an emerging service in most developing countries. He noted that price regulation of broadband is even more complex as it requires to address a far more intricate environment. He noted that the most of the regulation pricing approaches adopted have cited the EC framework, built on a solid approach for the assessment of market before imposing ex-ante regulation as best practice. The EC in 2013 announced a new Recommendation on non-discrimination (the equivalence model) and costing methodologies (Non-imposition of cost orientation with preconditions) which states that effective non-discrimination is best achieved by the application of Equivalence of Input (EOI) and that NRAs shouldn't impose cost orientation on NGA services if they are provided on an EOI basis and subject to significant competitive constraints as well as technical and economic replicability.

He concluded by noting that price regulation of new broadband services will require a more balanced approach to ensure sufficient investments are attracted to meet other policy goals for example on universal access, price regulation of legacy networks will still be of paramount importance and whereas consumers interests may be conflicting with political objectives the often conflicting policy targets will need to be redefined and re-aligned if Governments define clearly their broadband plans and targets.

The discussion from the session concluded with a call to regulators to develop long term broadband plans with clear role for the regulators, private sectors and all stakeholders including strategies for NGN investment, price regulation of unbundled services, mindful of the importance of the promotion of competition and addressing consumer needs.

Session 8 : Costing methodology for Roaming services

Mr Simon Forge started his presentation by highlighting some of the roaming issues today and European Union roaming proposals in September 2013 which calls for a removal of incoming call payments from 01 July 2014, the capping of outbound, mobile-to-mobile calls capped at €0.19/minute + VAT and to phase out roaming charges altogether in 2016.

He highlighted the growing need for consumer protection and the increasingly global nature of mobile communications across borders, as such today's consumer and industry context requires a cost model of mobile roaming to drive a general change in the industry's approach to the whole roaming question. ITU is taking the lead in developing a coherent and transparent cost methodology and model for roaming to be used as a reference by regulators. This was followed with a detailed review of the cost elements and the standard roaming infrastructure and architecture – the basis of roaming costs in the MNO including features of the use case model versus the business models, the financial structures for MNO roaming tariffs, the cost accounting requirements and the type of data to be collected from operators and regulators in the modelling exercise.

Participants noted the ongoing fragmented efforts on roaming citing the African Union, SADC and EAC projects and proposed for an international concentrated effort to be led by the ITU. **A detailed training on roaming costing and accounting for regulators and operators for the region was proposed** and the need to develop approaches that address bill shocks and *inadvertent* boarder charges.

Session 9: Monitoring the implementation of national Broadband plans.

The session was started off with a presentation by **Mr Luc MISSINDIMBAZI**, Projet Central African Backbone, République du Congo giving an overview of the ICT market in Congo followed by an elaboration of the pillars of the national development broadband plan which is an anchor for the digital culture for the country. He explained the legislative instruments and the programs in place such as the national fibre optic deployment which will cover the entire country in telecommunications infrastructure and interconnection to the neighbouring countries, the interconnection to the international cable systems- WAC as well and the Internet Exchange Point of the Republic of Congo called CGIX program that has been completed. Some of the impact of the ICTs programs such as the reduction in prices, the emergence of enhanced services for mobile finance and e-commerce, local content enhancement and the employment of more than 600 people as noted by Mr Missindimbazi.

The first panellist for the session **Mr Achime MALICK NDIAYE** from the Ministère de la communication et de l'économie numérique du Sénégal defined the digital vision for the country, noting that more than 6000 KM fiber optic has been laid by the private sector along the government network which links schools, hospitals and health centres. Other programs include the creation of centers of digital activities (DIGIPOLES), support to new cloud services (CLOUD AND IXPs) and the implementation of a CIRT.

The second panelist, **Mr Romain CIZA** highlighted the broadband developments of the Democratic Republic of Congo which include the construction of national broadband infrastructure to the sub-regional connections, the international connections and urban connections (distribution networks). He noted however that there is no proper defined monitoring the implementation of broadband development plan policy and Government is discussion with the various stakeholders to define a model that should be based on PPP, open access among others and ensure effective implementation. Discussions focused on the capacity building integrated in to the National Broadband plans, as this is an important part of the strategies applied by countries for the development of local content. This will also increase employment in the sector.

IV. Closure of the Forum

The next **BDT Regional Economic and Financial Forum of Telecommunications/ICT for Africa** together with the SG3RG-AFR meeting was planned to be held in February 2015 in Sao Tome et Principe, and Tanzania to be the second option, and Côte d'Ivoire for year 2016.

The delegates warmly thanked and paid tribute to the authorities of Republic of Congo and the ARPCE for hosting this important ITU event.

The Forum thanked Mr Yves CASTANOU for his capable chairmanship, to which it had been possible to complete the agenda within the time allowed and with excellent results.

Closing the discussions, Mr Yves CASTANOU thanked all the presenters and especially the ITU Experts and Panelists for their high-quality presentations over the course of the two-day forum, and all the participants for their diligence and active participation in the debates, as well as the BDT Staff for the excellent organization of this very interesting Forum.

The Chairman of the SG3RG-AFR Group, during their meeting, congratulated the BDT for the organization of the Forum and requested TSB to continue with the collaboration with the BDT, in order to carry on with the Forum prior to the SG3RG-AFR meetings.
